

12 September 1974

(DATE)

MEMORANDUM FOR THE RECORD - Opinion Request (Fast/Telephone)

SUBJECT: US/USSR Agreement on Scientific and Technical Cooperation  
WATER RESOURCES COOPERATIVE AREA

DUE DATE: September 18, 1974

COMMENT: The attached agreement was received in this office today.  
Please supply any comments you have no later than 18 Sept.  
I realize that you do not have enough time for an in-depth  
opinion.

Janie

DISTRIBUTION

*Comments attached*  
CIBG/1 - no net for statement, will comment on  
US/USSR proposal

11

K

HP - OK

DA

CIBG/1 - defer CIBG/1

CER - OK - no obs - repts

Ellie

Res

STATE TOLD

DATE

BY

25X1A

E2 IMPDET  
CL BY 007622

C-O-N-F-I-D-E-N-T-I-A-L

State Dept. declassification & release instructions on file.

UNITED STATES GOVERNMENT

# Memorandum

STATINTL

TO :  Deputy Chairman DATE: Sept. 11, 1974  
Interagency Advisory Group on Exchanges

FROM : Sol Polansky, Deputy Director  
Office of Soviet Union Affairs *SP*

SUBJECT: US-USSR Agreement on Scientific and Technical Cooperation -  
Water Resources Cooperative Area

Attached is a request for IGE reviews and comments on proposed new topics under the S&T Agreement. Although the time is short, I would hope that it would be possible to meet the September 18 deadline.

---





DEPARTMENT OF STATE

Washington, D.C. 20520

BUREAU OF INTERNATIONAL SCIENTIFIC  
AND TECHNOLOGICAL AFFAIRS

U.S.-U.S.S.R. Programs Secretariat

September 6, 1974

MEMORANDUM FOR:

[Redacted]  
Deputy Chairman  
Interagency Advisory Group on  
Exchanges

STATINTL

SUBJECT: U.S.-U.S.S.R. Agreement on Scientific  
and Technical Cooperation - Water  
Resources Cooperative Area

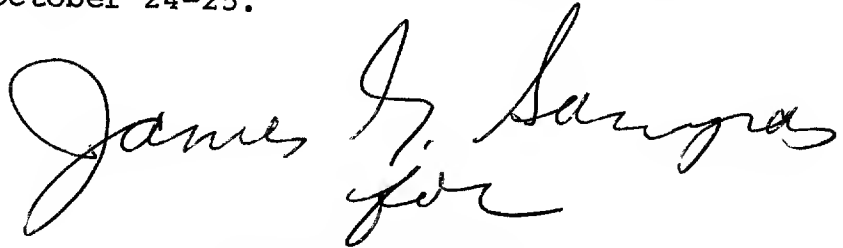
The U.S.-U.S.S.R. Joint Project Group on Planning, Utilization and Management of Water Resources held its first meeting in May 1974. Under paragraph II.2 of the record of the meeting both sides agreed to present for final decision by the Joint Commission at its next meeting the inclusion within the project area of two additional topics for cooperation: groundwater resources and fishery structures.

Although both topics were incorporated in the September 30, 1972 record of discussions of the Joint Working Group on Water Resources, which was considered by the Commission at its March 1973 meeting, neither was approved for priority implementation. A review of IIAGE comments dated December 5, 1972 and January 22, 1973 does not reveal that either of the proposed cooperative activities was specifically addressed by the Interagency Group. The IIAGE, however, was in general agreement with the November 30, 1972 assessment of benefits in the water resources area prepared by the Working Group Chairman, who believes the statement remains valid.

A current detailed description of each of the proposed new topics is enclosed for review and comment by the IGE. It would be appreciated if we could receive comments no later than September 18. Copies of the

- 2 -

proposals and other pertinent information will then be forwarded to the U.S. Members of the Commission for their review prior to consideration by the full Commission at its meeting October 24-25.

A handwritten signature in cursive script, appearing to read "James H. Ganley".

Oswald H. Ganley  
Executive Secretary

Enclosures:

1. Detailed Proposals
2. Record of Joint Project Group

**U.S.-U.S.S.R. Agreement on Scientific  
and Technical Cooperation**

**PROPOSED ADDITIONAL TOPIC FOR INCLUSION  
IN THE JOINT COOPERATIVE AREA OF**

**Title:** Ground Water Resources

**Recommended by:** U.S. Project Group on Planning, Utilization and Management of Water Resources

**Description and  
Scope:**

Joint activity of study of data systems, modeling and planning techniques, development, management, and recharge of ground water resources.

**Objectives:**

Exchange, discuss, compare and study the use and technologies for incorporating the ground water resources into a program of complete management and utilization of all water resources of an area. The potential and continuing role of ground water in a total water supply situation has often been overlooked or minimized.

**Mutual Interests  
and Contributions:**

This activity would involve consideration of ground water recharge, investigation techniques, reservoir storage, sustained yields, economics of recovery, management schemes, conjunctive ground and surface water developments, salt water intrusion and barriers, water quality, modeling techniques, and methods of administration and regulations.

A joint group with membership in the U.S.S.R. and U.S. will carry out this program. The U.S. membership will be comprised of representatives of the Bureau of Reclamation, Geological Survey, Corps of Engineers, Soil Conservation Service, and Water Resources Council. The Soviet side will be represented by VSEGINGEO of the U.S.S.R. Ministry of Geology.

-2-

U.S. Contacts and  
Possible Involvement:

Warren D. Fairchild, Director, Water Resources Council  
Thomas Maddock, Senior Scientist, Geological Survey

Magnitude and Sources  
of U.S. Involvement:

Magnitude unknown; however, sources would be participating U.S. agencies.

Benefits:

Benefits to United States largely unknown at this time because of void in knowledge as to U.S.S.R. state of the art. However, there is a need in the United States for additional understanding and capability in this area because of the vast potential of this resource that has not been developed to date on a comprehensive basis.

**U.S.-U.S.S.R. Agreement on Scientific  
and Technical Cooperation**

**PROPOSED ADDITIONAL TOPIC FOR INCLUSION  
IN THE JOINT COOPERATIVE AREA OF**

**Title:** Fishery Structures

**Recommended by:** U.S.S.R. Water Resources Planning, Utilization, and Management Project Group

**Description and**

**Scope:**

The problems of preservation and reproduction of valuable fish species in inland water bodies, where hydroprojects of various purposes are envisaged, include both the passing of fish through hydraulic structures to spawning areas and prevention of fish penetration into dangerous zones of hydroelectric stations, dams, and water intake structures. This problem can be solved with the help of construction of fish-protection facilities at headworks. These facilities include fish-passage and fish-protection structures as well as other structures and arrangements for passing downstream migrants and fingerlings. Various engineering solutions can be suggested in order to prevent or reduce the danger of fish kill downstream of hydraulic structures (caused by water releases from the reservoir bottom or by other factors). In addition, to the selective withdrawal of water (as the American side suggests) by the use of multilevel sluices, it is possible to reduce fish penetration into dangerous zones of upstream or downstream pools by means of arranging fish-protection facilities located considerably upstream or downstream of the headworks. In this case fish are prevented from entering zones where the headworks might have adverse effects and is transported to the upstream pool in special fish-pass structures or in fish-hauling devices. Development of such devices and structures is underway in the U.S.S.R. The development of efficient means of prevention of adult fish and fingerlings penetration into water intake openings, dangerous zones at hydraulic structures and in other zones of a stream where fish damage and kill are possible, may present the second aspect of the U.S. and U.S.S.R. specialists cooperation. The development of controlled artificial spawning areas is also a point of mutual interest for both countries. Research, experimental and pilot design studies are being carried out in all of the above-mentioned items. The cooperation between specialists of the U.S. and U.S.S.R. should be very beneficial.

-2-

Objectives: Development and improvement of methods of attraction, collection, and transportation of migrating fish to the upstream pool, passing of downstream migrants through hydraulic structures and development of efficient means of protection of adult fish and fingerlings from possible penetration into dangerous zones of hydroelectric stations and spillways into water intake openings and other places where damage and kill of fish may occur.

Mutual Interests As the first-stage effort, there would be an exchange of information on problems and objects and Contributions: in this field. After study of all information, a meeting of teams of U.S. and U.S.S.R. specialists would be advisable, in order to exchange opinions and to draw up a program of experimental, research and pilot design work.

U.S. Contacts and Possible Involvement: The joint program will involve personnel of the U.S. Army Corps of Engineers and the U.S. Department of the Interior and experts from the All-Union Research, Survey and Design Institute "Hydroproject" of the U.S.S.R. Ministry of Power and Electrification; the All-Union Corporation "Sojuzvodproject," the Institute of Inland Water Biology, the U.S.S.R. Academy of Sciences, the Institute of Evolutional Morphology and Ecology of Animals, the U.S.S.R. Academy of Sciences and the State Scientific Research Institute of River and Lake Fishery.

Magnitude and Sources of U.S. Involvement: Magnitude unknown at this time; however, source of involvement would be agencies listed above.

Benefits: There are continuing problems of fish kills and migration associated with large impoundments in the United States. U.S. agencies continue to work on these problems. Knowledge as to U.S.S.R. state of the art is very limited. Therefore, benefits to the United States are unknown.



P R O T O C O L

of the Meeting of the Joint U.S.-U.S.S.R.  
Project Coordinators on "Planning, Utilization  
and Management of Water Resources"

Moscow, USSR

11-25 May, 1974

I

In accordance with the U.S.-U.S.S.R. Agreement on Cooperation in the Field of Science and Technology signed in Moscow May 24, 1972, and with the Record of the First Meeting of the Joint U.S.-U.S.S.R. Work Group on Scientific and Technical Cooperation in Water Resources, signed September 30, 1972, the meeting of U.S.-U.S.S.R. Coordinators for "Planning, Utilization and Management of Water Resources" was held in Moscow, 11-25 May, 1974.

The U.S. delegation was headed by Warren D. Fairchild, U.S. Project Coordinator and Director, Water Resources Council.

The U.S.S.R. delegation was headed by A.M. Volynov, Soviet Project Coordinator and Director General, Sojuzvodproject.

A list of the participants in the meeting is attached as Appendix 1.

At the meeting each Side presented and discussed the following items:

1. Programme of cooperative activities under the Project.
2. The list of priority cooperative activities for a period of 1974-1975.
3. Proposed itinerary for the Soviet delegation's September, 1974, visit to the United States.

II

1. At the meeting each Side exchanged opinions and information on the activities, undertaken in their countries in the sphere of water projects' design and implementation, of water resources planning and optimal utilization being of mutual interest; discussed the form and the scope of

cooperative activities; and agreed on the specifics of the cooperative projects (see Appendix 2) and on a selected list of priority cooperative projects framed by the Programme for 1974-1975. (See Appendix 3).

2. At the meeting each Side discussed the specifics of cooperative projects in accordance with item I of the present Document and expressed the wish on the advisability of enlisting the following items: "groundwater resources" and "fishery structures" as contained in the Record of the First Meeting of the U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation in Water resources signed September, 30, 1972. (Projects I-II and II-9). It is meant to discuss the item on "groundwater resources" along with the elaboration of water budgets, while the item on fishery structures along with multi-purpose projects. Both Sides agreed on presenting these items for the final decision at the next meeting of the U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation.

3. At the meeting both Sides discussed and agreed on the proposed itinerary of the Soviet delegation's visit to the United States in September, 1974, (see Appendix 4) that is to be finally agreed on by both Sides one month before the delegation to leave for the United States.

4. In accordance with the itinerary, the U.S. delegation was received by Borodavchenko, Deputy Minister, USSR Ministry of Land Reclamation and Water Management - the U.S.S.R. Chairman of the Joint U.S.-U.S.S.R. Work Group in Water Resources.

The U.S. specialists were acquainted with the activities of several water agencies and with technical decisions on large-scale projects, and also visited the following water projects in the Ukraine and Uzbekistan:

- the Kakhovka irrigation project;
- the Northern Crimea irrigation canal project;
- the Hungry Steppe irrigation project;

- the Yangiery reinforced concrete manufacturing plant;
- Construction area of the Karshin irrigation project.

5. It is the position of the Project Coordinators that:  
The financial support for cooperative activities (including visits of delegations) should be in accordance with the Record of the Second Meeting of the U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation signed November 30, 1973.

6. The programme schedule, enclosed as Appendices 2 and 3 may be subject to changes in timing by each Side under the condition of mutual agreement between the Coordinators or their designated representatives. It is planned that a detailed review of this program will be made during the September visit of the U.S.S.R. team to the United States. Progress will be monitored and appropriate action taken.

### III


Both sides noted with satisfaction an atmosphere of mutual understanding and respect and the businesslike manner, which contribute to further development and extension of cooperative activities in the field of optimal use of water resources.

The present Protocol is signed in English and in Russian (two copies each) on May 23, 1974. Both texts are authentic and equally authoritative.

U.S.A. Project  
Coordinator

  
Warren D. Fairchild

U.S.S.R. Project  
Coordinator

  
A. Volynov

LS NO. 41911  
T-134/R-XVIII  
Russian

Appendix 1

LIST

of participants at the meeting of the coordinators of the  
Soviet and American sides on topic I-1 "Planning and elaboration  
of measures for the rational use of water resources"

Moscow

May 11-25, 1974

SOVIET SIDE

1. Volynov, A.M.	V/O [All-Union Association] "Sojuzvodproject"	Director General
2. Fialkovsky, P.G.	"	Chief Engineer
3. Moiseyev, N.N.	Academy of Sciences of the U.S.S.R.	Deputy Director, Computer Center
4. Basin, N.V.	SOPS [Council for the Study of Pro- ductive Resources], Gosplan [State Plan- ning Committee] of the U.S.S.R.	Department Manager
5. Balajev, L.G.	VNIIGIM [All-Union Scientific Research Institute of Hydrau- lic Engineering and Reclamation]	Acting Director
6. Mirtskhulava, Ts.E.	GruzNIIGIM [Georgian Republic Scientific Research Institute of Hydraulic Engineering and Reclamation]	Director of the Institute

7. Dunin-Barkovsky, L.V.	Institute of Water Problems, U.S.S.R. Academy of Sciences	Deputy Director
8. Kolesnikov, L.N.	U.S.S.R. Ministry of Land and Water Management	Deputy Director, Office for scientific and technical cooperation
9. Shiklomanov, I.N.	U.S.S.R. State Hydrological Institute, Hydrometeorological Service	Deputy Director
10. Gangardt, G.G.	"Hydroproject" Institute	Deputy Chief Engineer
11. Dmitriyev, V.S.	VNIIGiM [All-Union Scientific Research Institute of Hydraulic Engineering and Reclamation]	Deputy Director
12. Lvovitch, M.I.	Geography Institute of the U.S.S.R.	Division Manager
13. Gerardi, I.A.	V/O "Sojuzvodproject"	Deputy Chief Engineer
14. Vasilchenko, G.V.	CNIIKIVR	Division Manager
15. Ozeransky, S.L.	MENIL	Division Manager
16. Kartvelishvili, N.A.	MENIL	Division Chief
17. Schabalín, A.F.	VODGEO [All-Union Scientific Research Institute of Water Supply, Sewer Systems, Hydraulic Engineering Structures and Engineering Hydrology], Gosstroy [State Committee for Construction] of the U.S.S.R.	Laboratory Manager
18. Berditchevsky, L.S.	Ichthyology Commission, U.S.S.R. Ministry of Fisheries	Chairman of the Commission
19. Altunin, V.S.	MILT	Senior Lecturer

20. Pavlenko, L.D.	V/O "Sojuzvod-project"	Deputy Director General
21. Kostyakov, N.S.	"	Chief, Foreign Relations Division
22. Beniashvili, V.D.	"	Chief, Foreign Relations Division
23. Korbut, S.F.	U.S.S.R. Ministry of Land and Water Management	Secretary of the Working Group on Water Problems
24. Anchiforov, G.I.	V/O "Sojuzvod-project"	Interpreter

AMERICAN SIDE

1. Warren D. Fairchild	(Topic Coordinator) Director, United States Water Resources Council
2. James J. O'Brien	Deputy Commissioner, Bureau of Reclamation, Department of the Interior
3. Jack R. Jorgensen	Acting Assistant Director, Office of Water Resources Research, Department of the Interior
4. Dr. Thomas D. Maddock	Senior Scientist, Water Resources Division, U.S. Geological Survey
5. Jack R. Thompson	Deputy Chief of the Technical Division of the Director of Civil Engineering, U.S. Army Corps of Engineers
6. Joseph W. Haas	Assistant Deputy Chief, Watersheds, Soil Conservation Service, Department of Agriculture

## APPENDIX 2

P R O G R A M M E  
of USSR-USA Scientific and Technical Cooperation  
on "Water Resources -  
Problems of Water Resources Planning and Management  
Methodology"

Theme I-I. "Water Resources Planning and Rational Use"

Nos.	Name of item and phase	Procedures at each phase or item	Executors in			Completion period
			USSR	USA		
1	2	3	4	5	6	
I	<u>RESEARCH</u>					
	Formulation of research programmes being of mutual interest and to the benefit for the USSR and USA cooperative activities	Preparation of working programmes on separate items	USSR coordinator	USDI (OWRR)	1977	
II	<u>PROSPECTIVE PLANNING</u>					
	Water resources development planning principles and methods on a regional and country-wide basis, including:	<u>Results:</u> Recommendations on rational planning methods, staging and priorities of water resources development	Sojuzvod-project	WRC COE USDI USDA	1977	

2.

1	2	3	4	5	6
	A) quantitative and qualitative appraisal of changes in river basin water resources as a result of man activities	<ul style="list-style-type: none"> <li>- Exchange of relevant scientific and technical information.</li> <li>- Meetings on relevant items.</li> <li>- Development of recommendations and methods</li> </ul>	State Hydro-logical Inst.; Geography Inst.; USSR Academy of Sciences	(GS) (BR) (FNL) (BOR) (FS) (SCS) (ERS) (EPA) (IVA)	1974       1975   1976
	1) Evaluation of run-off shortage and the ways to its reduction;		Inst. of Water Problems, USSR Academy of Sciences;		1976
	2) Optimization of integrated river basin water resources development;		Inst. of Water Problems; KEMIL		1977
	3) Effect of water projects on environments, ecological complexes and land use practices;		Inst. of Water Problems; Geography Inst., USSR Academy of Sciences; Ichthyology Commission, USSR Ministry of Fishery; Soil Science and Agrochemistry Inst.; USSR Academy of Sciences NIIW Bel.SSR		1976



3.

1	2	3	4	5	6
	4) Technical and economic efficiency of reclamation undertakings and multipurpose water projects;		VNIIGIL SOPS Gosplan USSR		1975
	5) Methods of water budget determination for river basins and inland seas;		Inst. of Water Problems, USSR Academy of Sciences; OMIKIVR; Hydroproject		1975
	6) Economic evaluation of water as a natural resource		SOPS Gosplan SSSR; MENIL; OMI		1976
B)	Methods of hydrological data collection, analysis, storage and retrieval in order to develop hydrological models and to design water projects	- Exchange of relevant scientific and technical information - Symposium - Recommendations on methodology application for determining hydrological parameters for water projects.	State Hydrological Institute;  Inst. of Water Problems, USSR Academy of Sciences; MENIL	(GS) (BR) (FS) (SCS) (ARS) (OWRE) (TVA)	1974  1975-1976 1977

1	2	3	4	5	6
	C) Systems approach to planning large river basin water resources programmes	- Exchange of scientific and technical literature, methodological developments and technical data on water projects in river basins	VNIIGIN; Inst. of Water Problems, USSR Academy of Sciences; MNIIL; CNITKIVR	(BR) (SCS) (FS) (GS) (BR) (ERS) (OWRR) (TVA)	1974
		- Cooperative planning and arrangement of meetings in the USA and USSR			1975
		<u>Results:</u>			
		- Development of methods and technical decisions on the basis of separate water projects			1976
	D) Development and application of mathematical models:	Ditto	VNIIGIN; CNITKIVR	(OWRR) (GS) (BR) (SCS) (FS)	1977
	1) development of planning models for water utilization and distribution within a river basin			(ERS) (TVA)	

5.

1	2	3	4	5	6
---	---	---	---	---	---

III DESIGN AND CONSTRUCTION OF WATER PROJECTS

Design methods, implementation, administration and construction techniques of water projects under different natural conditions, including large river run-off transfer projects.

- Exchange of relevant scientific and technical information. Sojuzvodproject COE 1974  
USDI  
USDA

- Arrangement of meetings. 1975-1976

- Exchange of relevant announcement lists. 1975-1976

- Cooperative design. 1975-1976

Results:

Recommendations on design aspects of large canals, pumping and pumped storage stations, dams, roads.

1977

A) Large canals:  
1) hydraulic calculations period;

Hydrovodoz; (BR) 1975-1976  
Hydroproject; (GS)  
VNIIIGIM;  
NIIGIM,  
Georgian SSR;  
LPI;  
NIIGIM,  
Georgian SSR

1	2	3	4	5	6
	2) calculation methods for dynamically stable crosssections of large canals;				1975
	3) methods for determining the value of stationary (constant) flow volumes, i.e. value of min. adequate flow				1975
	B) Pumping stations:				
	1) Recommendations on selecting the unit capacity of electro- power and mechanical equipment for pumping stations.		Hydrovodoz; Hydroproject; VNIHydromash; LPI; Hydrochimash	(BR) (SCS)	1975
	C) Hydro power and Pumped storage stations:				
	1) Methodology and economic efficiency of hydro power and pumped storage in a multi-purpose water project		Hydroproject; VNIIG; Hydrovodoz; LPI	(BR)	1976

7.

1	2	3	4	5	6
	D) Dams:				
	1) Earth, concrete and rock-fill dams		Hydrovodoz; Hydroproject; VNIIG; Sredaz Hypro- vokhlopok;	(SCS) (BR)	1976
	2) Navigation locks and navigation channels		Hydrorech- trans; CNIEVT		1977
	F) Fishery structures		Hydrovodoz; Hydroproject; Hydrotribproject;	(BR) (FWL)	1977
IV	<u>MANAGEMENT OF WATER AND RELATED LAND RESOURCES WITHIN BASINS AND REGIONS</u>				
	Methods and ways to improve water resources management and to increase efficiency of water resources use, including:				
	- Exchange of relevant scientific and technical literature and information	Sojuzvodproject		USDI USDA COE	1974
	- Exchange of experts to acquaint with researches, and arrangement of symposium on rational water distribution between water users				1975-1976

8.

1	2	3	4	5	6
		<u>Results:</u>			
		Development of methods for water resources management; preparation of water consumption standards			1977
	A) Optimal water use and water consumption stan- dards for industries, irrigation, agriculture, thermal power stations and municipalities		VOBGEO; MENIL; HYPROVODHOZ; CHIKIVR; VNIIGIL; TEP AKH RSTSR	(WRC) (SCS) (ARS) (BR) (FLL) (OWRR) (EPA) (PS)	1975
	1) Principle of water distribution between users under water resources shortage				1976
	B) Groundwater.		VSBGIMGEO	(GS); (BR); (SCS)	1977
	C) Reservoirs. River and canal systems.		Hydroproject; Hyprovodhoz; VNIIG;	(BR) (SCS) (PS) (TVA) (BLM)	1977
	1) Ways to increase effective use of multi-purpose re- servoirs and river and canal systems			(BR) (SCS) (PS) (TVA) (BLM)	

1	2	3	4	5	6
	D) Natural environment conservation		Geography Inst., USSR Academy of Sciences; State Hydro-logical Inst.; Inst. of Lake Research; VNIIVO	(BR) (ENV) (BOR) (BLM) (SCS) (FS) (EPA)	1977
	E) Preparation of institutional scheme: principles of interaction and subordination of agencies responsible for river basin water resources programmes		VNIIGIM; VNIKArecclation;	(WRC) (BR) (SCS)	1976
	F) Elaboration of optimal schemes on technical facilities, operational and systems analytical programmes to provide river basin water resources automatic control for multi-purpose water projects		VNIIGIM; VNIKArecclation;	(BR) (SCS) (FS)	1977
	G) Development of models for operation and management of water distribution within a river basin and water project (hydro-reclamation systems)		VNIIGIM; VNIKArecclation	(OWRR) (GS) (BR) (SCS) (ERS) (TVA)	1976

1	2	3	4	5	6
	<p>V</p> <p><u>IRRIGATION WATER QUALITY</u></p> <p><u>PROBLEM</u></p> <p>Irrigation water quality with special reference to methods and technology for:</p>		<p>VNIIGIL</p>		
		<p>- Exchange of relevant scientific and technical information</p>	<p>SANILRI; NIIGIL Azerb. SSR; VNIIVO; Inst. of Deserts, Turkmen SSR Academy of Sciences; Hydrovodoz</p>	<p>USDI USDA</p>	<p>1974</p>
		<p>- Symposium on saline water use for irrigation</p>			<p>1975</p>
		<p>- Joint research on this particular subject</p>			<p>1975-1977</p>
		<p><u>Results:</u></p>			
		<p>- Recommendations</p>			<p>1977</p>
	<p>A) Effective use of saline irrigated lands;</p> <p>B) Effective use of saline water</p>			<p>(BR) (SCS) (ARS) (CIRP) (EML)</p>	<p>1975  1975</p>



11.

* 1	2	3	4	5	6
-----	---	---	---	---	---

VI  
EROSION AND SEDIMENT PROBLEMS  
OF WATERSHEDS AND CANALS

Evaluation, analysis and prediction of sedimentation and erosion processes in river basins

- Exchange of scientific and technical information on soil erosion control and prediction, including irrigation erosion and deformation of water bodies, rivers and canals  
MIGIM, USSR; GEORG. SSR; YUGOSLAVIA; SAVIRI; MIGIM, USSR; UKRAIN. SSR; State Hydrological Inst.;  
USDI  
USDA  
COE  
1974
- Exchange of pamphlets on existing measuring devices.  
1974
- Arrangement of meeting on engineering procedures for prediction and erosion control of lands, canals, rivers and water bodies  
1975-1976

Results:

Recommendations on water erosion prediction methods and control procedures in water projects.

A) methods of erosion and sedimentation control

MIGIM,  
Georgian SSR;  
State Hydro-  
logical Inst.;  
SAVIRI

(SCS)  
(TS)  
(BR)  
(BLM)  
(FWS)  
(ARS)  
(GWR)  
(IWA)  
1976

1977

1	2	3	4	5	6
	B) methods of investigation and measuring of erosion and of bed and suspended loads regime		Ditto		1976
	C) management of channel processes		State Hydro-logical Inst.; MIIT		1976
VII	<u>GROUNDWATER RESOURCES</u>				
	Accumulation, storage and use of Groundwater	- Exchange of literature and technical information	VSEGINGEO; Inst. of Water Problems, USSR Academy of Sciences	USDI USDA COE	1974-1975
	A) methods and techniques for investigating Groundwater availability	- Joint Work on Subject including trips of specialists - Results & recommendations	VSEGINGEO	(GS) (BR) (SCS) (WRC)	1975-1977 1977
	B) Recharge and storage		Inst. of Water Problems, USSR Academy of Sciences		1976-1977
	G) Groundwater utilization, including conjunctive use with surface systems		Ditto		1976-1977

1	2	3	4	5	6

D) Subsidence due to ground-water extractions

VSEGIN GEO

1977

## Notes:

- /1. First entities listed will serve as lead agency for numerated items.
- /2. USA entities shown in ( ) will serve in an advisory capacity to work group for sub-item.
- /3. Legend for USA participation.

PRIORITY COOPERATIVE PROJECTS FOR THE PERIOD  
OF 1974-1975, IN CONNECTION WITH THE COOPERATION  
ON WATER RESOURCES BETWEEN THE USSR AND THE USA  
- PROBLEMS OF WATER RESOURCES PLANNING  
AND MANAGEMENT METHODOLOGY

II.A.

Objective: To undertake specific programs to improve understanding, methodology and technique on assessing the effects that the activities of man have on the quality and quantity in the water and related land resources of a river basin.

Definition: Since man and his activities are an inextricable component of the environment of a region, river basin or the entire world, it is necessary for man to understand such impacts so as he can best plan, develop, utilize and manage the water and the related land resources with full knowledge as to the consequences of his actions. This joint item will include:

1. Exchange of literature and scientific information on the subject;
2. Programs to assess the major problems and interactions among physical, biological and chemical factors;
3. Develop planning processes to assess quantifiable economic impacts as well as non-quantifiable environments impacts; and
4. Assess such impacts.

Participating Agencies

U.S.A.

1. WRC
2. COE
3. U.S.D.I.
4. U.S.D.A.
5. plus advisory agencies listed in general program.

U.S.S.R.

1. Sojuzvodproject - coordinator
2. State Hydrological Institute
3. Geography Institute
4. USSR Academy of Sciences

Schedule

- |   |                    |
|---|--------------------|
| 1. Exchange of Literature                       | - 4th Quarter 1974 |
| 2. Agreement on Plan of Study                   | - 4th Quarter 1974 |
| 3. Meeting and Exchange on agreed<br>upon items | - 1975             |
| 4. Recommendation and Report                    | - 4th Quarter 1975 |

- 3 -

## II.A.I.

Objective: To explore innovative techniques for reducing run-off shortages thereby increasing available water supplies for domestic agricultural and industrial use.

Description: Cooperation under this item will be limited to the following:

- a. Utilization of municipal and industrial waste waters for irrigation purposes;
- b. Weather modification to increase available water, i.e., cloud seeding to increase rainfall and snowpack.

Proper use of wastewaters for irrigation purposes can increase crop yields as well as provide an effective means for wastewater treatment. Land application of wastewaters has been utilized in many parts of the world for a number of years, however, documented information as to the effects of this practice is limited.

Items to be explored would include:

- a) Application practices;
- b) Soil chemistry changes;
- c) Groundwater or return flow water quality changes;
- d) Crop production (Types, effects, etc.)
- e) Effect of weather changes on treatment mechanism in irrigated fields;
- f) Land disposal of sludge and toxic matter.

### Participating Agencies

(This is for wastewater study)

#### U.S.A.

Corps of Engineers  
Environmental Protection Agency  
OWRR  
USDA  
GS

#### U.S.S.R.

Institute of Water Problems,  
USSR Academy of Sciences;  
VNII VODGEO  
VNIIVO  
State Hydrological Institute  
State Geophysical Observatory  
VNIIGiM

Schedule

Development of Program	- June 1974
Exchange of Information	- July 1974
U.S. Team visit U.S.S.R. Facilities	- August 1974
U.S.S.R. Team visit U.S.A. Facilities	- September 1974
Document Findings and identification of joint working program for research and data collection activity	- January 1975
Exchange visits by technicians	- 1975
Preliminary report	- 4th Quarter 1975
Complete research or data collec- tion	- through 1976

II.A.4; IV.G

Objectives: Elaboration of recommendations on improved methods of assessing the efficiency of reclamation and multi-purpose projects; comparison and assessment of existing U.S. and U.S.S.R. methods.

Description: The programme includes the following items:

- profitability and return of main and associated capital funds invested in implementation of reclamation projects and in irrigated land development;
- economic appraisal of effects of reclamation projects on environments within and beyond service area;
- assessment of social and economic progress within a region under reclamation;
- economic appraisal of multi-purpose project;
- appraisal of economic effect after completing a multi-purpose water project;

It is suggested for the period under the programme carrying out:

- to exchange literature and scientific information on the subject;
- to prepare joint working programme of relevant researches;
- to exchange, study and discuss design literature on typical reclamation and water projects;
- to hold a joint symposium on the subject;
- to prepare the final report.

Participating Agencies:

USA:

Water Resources Council;  
Fish and Wildlife Service (USD1)  
Economic Research Service (USDA)

USSR:

V/O "Sojuzvodproject" -

Coordinator;



Schedule:

1. Exchange of technical information  
and project documents - 4th Quarter 1974
2. USSR experts' visit to USA  
(preparation of working  
programme) - September, 1974
3. U.S. experts' visit to U.S.S.R.  
(preliminary discussions on  
the project documents studied  
in both countries) -
4. Joint symposium (USSR) - 3rd Quarter 1975
5. Final report on the subject - 4th Quarter 1975

## II.A.5

Objective: The rapid increase of water consumption in both countries arises the necessity for planning and careful control of available water resources. The target of the research is to develop the most effective water budget calculation methods for a river basin, region and closed sea or lake with reference to rational water distribution.

Definition: Activity will be held in the following lines:

- Exchange of scientific and technical information and methodological development;
- Preparation of the working program;
- Calculation of the Syr-Darya river basin budget by the U.S.S.R. and U.S.A. methods and by water consumption enlarged standards existing in U.S.A. and U.S.S.R. for industries and environment conservation.
- Joint meeting to discuss the results on the Syr-Darya river basin budget calculation procedures and research completed;
- Report preparation.

### Participating Agencies

#### U.S.A.

1. Water Resources Council;
2. Corps of Engineers;
3. Environmental Protection Agency;
4. Water Resources Council;
5. Fish and Wildlife Service.

#### U.S.S.R.

1. V/O "Sojuzvodproject" - Coordinator;
2. Inst.of Water Problems, USSR Academy of Sciences;
3. CNIIKivr;
4. Hydroproject

Schedule:

1. Exchange of scientific and technical information and methodological developments - 4th Quarter 1974
2. Visit of Soviet experts to U.S.A. (working program coordination) - 3rd Quarter 1974
3. Holding the joint meeting in Moscow - 3rd Quarter 1975
4. Final Report preparation - 4th Quarter 1975.

II.C.

Objective: Development of methods and recommendations on systems analysis application to assess efficiency of regional and river basin water resources.

Description: Activity will be held in the following lines:

- exchange of scientific, technical and methodological information;
- meeting for discussing and adopting the working programme;
- joint researches in the Syr-Darya river basin;
- preparing a report on the subject.

Participants:

U.S.S.R.

1. VNIIGIM; (leading agency)
2. Institute of Water Problems;
3. Computing centre, USSR Academy of Sciences;
4. MENIL;
5. CNIKIIVR

U.S.A.

Schedule:

Exchange of technical information and methodological developments	- 3rd Quarter 1974
Coordination of the working programme in U.S.A.	- September 1974
Meeting (U.S.S.R.) on discussing the existing systems analysis methods of region and river basin water resources optimal utilization, and on developing recommendations on the methods to be used in U.S.S.R. and U.S.A.	- 1st Quarter 1975
Cooperative development of simulation models for region and river basin water resources development	- 1975

- 10 -

Meeting (U.S.A.) on simulation  
modeling

- 2nd Quarter 1975

Preparation of report on the subject

- 4th quarter 1975

III. A.

Objectives: Recommendations on design methods, administration and construction techniques basing upon large canal projects for run-off transfer, which include waterworks, pumping and pumped storage stations, including:

- Development of hydraulic calculations period for large canals over 1000 cumecs of conveyance capacity at hydraulic radius more than 10 m;
- Computing and modeling methods of dynamically stable large canal cross-sections;
- Criteria for determining the value of constant flow volumes at gauge stations.

Description: The programme will be carried out on the basis of run-off transfer projects, as follows:

- to study available projects on multi-purpose water resources development and interbasin run-off transfer in USA and USSR in order to exchange experience in design methodology;
- to discuss administration and earthwork processing techniques of inter-basin large canal construction on the basis of "Feasibility Study on Siberian River Run-offs Transfer" (main canal); to present the recommendations on the subject;
- to prepare research programme and to develop simulation model of calculation procedures for dynamically stable longitudinal profiles and cross-sections of large canals on the basis of the Siberian River Run-off Transfer Project (main canal);
- to discuss methods for determining the value of min. adequate flow volumes in waterworks downstream with account to aquatic ecosystem conservation along a river channel and in its delta.

Participants:

USSR: V/O "Sojuzvodproject" - Coordinator and lead agency on item III.

Hyprovodhoz;

Hydroproject;  
LPI;  
VNIIG; GruzNIIGIM.

USA:

BR; GS; COE.

- Schedule:
- 1) USSR experts' visit to USA to exchange experience in multi-purpose water resources development and inter-basin run-off distribution on US existing relevant projects; to identify the working programme on the subject - 3<sup>rd</sup> quarter, 1974.
  - 2) US experts' visit to USSR (Moscow) to discuss administration and earthworks processing techniques for large canal construction on the basis of "Feasibility Study on Siberian River Run-offs Transfer Project", to present the recommendations on the subject - 2<sup>nd</sup> quarter, 1975.
  - 3) Visit to USA to discuss the results of the study and the adopted hydraulic calculations method for the Siberian River Run-offs Transfer Project (the main canal and to present the recommendations on the subject; to discuss the simulation model for delineating calculation methods of dynamically stable longitudinal profiles and cross-sections on the basis of the Siberian River Run-offs Transfer Project (main canal) - 3<sup>rd</sup> quarter 1975.
  - 4) US experts visit to USSR to discuss methods for determining the value of min. adequate flows in waterworks' downstream with account to aquatic ecosystem conservation - 4<sup>th</sup> quarter 1975.
  - 5) Preparation of concluding report - 4<sup>th</sup> quarter, 1975.

## DESIGN AND CONSTRUCTION OF WATER PROJECTS

### III B.

Objective: Recommendations on selecting the unit capacity of electropower and hydromechanical equipment for pumping stations.

Description: Activity will be directed along the following lines, which will follow in chronological order:

1. Meeting of Soviet and American specialists on pumping plants and associated electrical equipment for semiformal discussion on the state of the science in each country. (2 to 4 participants from each side).
2. At this meeting, the following elements will be discussed:
  - a) Identification of differing concepts of pump sizing, including discharge and lift, and single versus multiple lifts.
  - b) Materials.
  - c) Design, fabrication and installation methods.
  - d) Operational techniques and limitations.
  - e) Manufacturing quality control and maintenance requirements.
  - f) Economic evaluations relating capacity to speed, durability, initial and operating costs, efficiency and power requirements.
  - g) New concepts for pump and motor design, manufacture, installation, operation and maintenance.
  - h) Visit to typical pump stations in the U.S.A.
3. Following this meeting, there would be a period for study, review and comment upon information and conceptual ideas that were exchanged.



-14 -

4. A second conference would be held to discuss the respective findings and to propose a joint report on recommendations for selection of pump units and associated electropower equipment. Visit to typical pump stations in the U.S.S.R. Report printed in Russian and English.

Participating Agencies

U.S.A.: Bureau of Reclamation; Soil Conservation Service

U.S.S.R. Hyprovodhoz; Hydroproject; VNII Hydromash, LPI.

Schedule

1st visit to U.S.A.	- 4th Quarter 1974
2nd visit to U.S.S.R.	- 3rd Quarter 1975
Report Completed and Printed	- 4th Quarter 1975.

#### IV.A

Objective: Development of water use and water consumption enlarged standards for national economy and industry to work out inter-basin run-off transfer project for regions with water resources shortage. Principles of water distribution between water users.

Description: Activity will be held in the following lines:

- exchange of scientific and technical literature and information;
- discussion on methods of identification the enlarged standards of water consumption and water diversion for various branches of national economy;
- recommendations on water consumption and water use enlarged standards for various branches of national economy;
- exchanges of experts for acquainting with research works on water use and water consumption enlarged standards.

#### Participating Agencies

##### U.S.A.

WRC  
SCS  
ARS  
BR  
FWL  
OWRR  
EPA  
FS

##### U.S.S.R.

Coordinator of Item IV - V/O "Sojuz-  
vodproject"  
VNII VODGEO  
CNILKiVR  
VNIIGIM  
Hyprovodhoz  
TEP  
AKII RSFSR  
MENIL

#### Schedule

- Exchange of scientific and technical literature and information - 3rd Quarter 1974
- Working program agreement in USA and discussion the methods of water use and water consumption enlarged standards for various branches of national economy - 3rd Quarter 1974

- Development of water use and water consumption enlarged standards for various branches of national economy - 2nd Quarter 1975
- Discussion on the results of research and working out recommendations in USSR - 3rd Quarter 1975
- Final Report Preparation - 4th Quarter 1975

IV.E.

Objective: Preparation of institutional scheme for integrated river basin management with account to advanced technical achievements to solve water distribution problems within a river basin.

Definition: Activity will be held on a definite river, for instance Syr Daria, in the following lines:

- exchange of methodological and technical information
- joint elaboration of the relevant technical decisions.

Participating Agencies

U.S.A.: WRC,  
BR,  
SCS

USSR: VNIIGiM  
VNIKAMElioratsii

Schedule

Exchange of Methodological and technical information	- 3rd Quarter 1974
Elaboration of the relevant technical decisions	- 1975
Joint discussion of the results in the USSR	- 3d Quarter 1975
Final Report Preparation	- 4th Quarter 1975

V. A) B)

#### Objective

The objective of this joint program is to establish a study group of experts to share the experience of both countries in the use of saline water and saline lands for irrigation and further to carry out studies as necessary to arrive at recommendations to improve existing practices in the use of saline water effective desalination practices for irrigated saline lands.

#### Description

The program will be carried out by a joint team of experts from each country. The team should be composed of both soils, and water experts. The detailed work plan will be developed by the joint team after an exchange of technical information on an arid irrigated land area chosen by each country for study. The

selection of this area should be considered typical of a regional condition having salinity problems. The work plan should include joint or parallel research or field experiments on soil and water chemistry, irrigation and drainage system design and management practices, crop productivity under various levels of salinity and crop patterns to optimize productivity.

The concluding report should contain ideas or recommendations for adopting new design criteria for irrigation and drainage systems on for new farm and irrigation system management.

#### Participants

##### U.S.A.

U.S. Department of Agriculture (Agricultural Research Service)

U.S. Department of the Interior (Bureau of Reclamation; Office of Water Resources Research).

USSR: VNIIGiM; SANIIRI; AzNIIGiM; VNIIVO; Inst. of Deserts, Turkmen SSR Academy of Sciences; Hyprovodhoz.

- 19 -

Schedule

Exchange of technical data	-	July 1974
USSR team visit to USA (tentative plan of study)	-	Sept. 1974
U.S. team visit to USSR (Final plan of study)	-	Oct. 1974
Research and study activity	-	Nov. 1974-June 1975
Meeting of the teams in the USSR (Assesment of results preliminary Conclusions and recommendations)	-	July 1975
Continuing study	-	July 1975-Dec.1975
Prepare Concluding Report	-	Dec. 1975.

VI.

Objective: To exchange scientific information on procedures for prediction of erosion and sedimentation processes in river basins, channels, and canals and methods for its control.

Description: The erosion process depletes the basic soil resource base needed for continuing crop production. In addition, the eroded soil is deposited in streams, lakes, bridges, canals, and the like, decreasing their effectiveness and adversely affecting water quality. It is important to understand the processes involved in order to plan and design effective control devices. This item includes five sub-topics:

- A. Methods of Predicting river basin gross erosion.
- B. Methods of investigating stream erosion and measuring bed and suspended loads in streams and large canals.
- C. Methods of predicting ratio of gross erosion to amount of sediment delivered to lakes.
- D. Conservation practices to reduce on-farm erosion.
- E. Measures to stabilize stream banks.

Participating Agencies:

U.S.A.      Soil Conservation Service, USDA  
                Agricultural Research Service, USDA  
                Forest Service, USDA  
                Bureau of Reclamation, USDI  
                Bureau of Land Management, USDI  
                U.S. Geological Survey, USDI  
                Office of Water Resources Research, USDI

Tennessee Valley Authority  
Approved For Release 2002/05/07 : CIA-RDP79-00798A000600100002-9  
(plus U.S.S.R. groups)

U.S.S.R.

1. GruzNIIGiM
2. MIIT
3. Institute of Water Problems, Academy of Sciences of the USSR
4. YuzhNIIGiM.
5. SANIIRI.
6. UkrNIIGiM.
7. State Hydrological Institute.

Schedule

Exchange of Technical Literature	- Sept. 1, 1974
Develop Program of Work	- Jan., 1975
USSR team to U.S.A.	- April, 1975
USA team to U.S.S.R.	- September, 1975
Final report and recommendations	- January, 1976



U.S.-U.S.S.R. JOINT COMMISSION ON  
SCIENTIFIC AND TECHNICAL COOPERATION

Proposed Itinerary for Visit of U.S.S.R.  
Group on Planning, Utilization and  
Management of Water Resources  
(September 6-20, 1974)

September 6, 1974 - Friday

U.S.S.R. Group to arrive at Dulles Airport, Washington, D.C.,  
direct Aeroflot flight from Moscow.

September 7, 1974 - Saturday

Free day to adjust to time change and to visit the Washington  
area.

September 8, 1974 - Sunday

Travel to Knoxville, Tennessee.

September 9, 1974 - Monday

Visit the Tennessee Valley Authority.

September 10-11, 1974, Tuesday-Wednesday

Travel to Vicksburg, Mississippi, and visit the Corps of  
Engineers Waterways Experiment Station.

September 12-13, 1974, Thursday-Friday

Travel to Sacramento, California, and visit the Central Valley  
Project.

September 14, 1974 - Saturday

Visit the San Francisco Bay Area.

September 15, 1974 - Sunday

Travel to Denver, Colorado

September 16-19, 1974 - Monday,  
Tuesday, Wednesday, and Thursday

Visit the Bureau of Reclamation Engineering and Research Center  
and conduct working group meeting.

September 20, 1974 - Friday

Travel to Washington, D.C., and depart from Dulles Airport  
via Aeroflot flight to Moscow.

SUPPLEMENT

to the Proposed Itinerary of the Soviet  
Delegation's Visit to the United States  
in September, 1974

The U.S.S.R. Side has agreed on the proposed itinerary,  
submitted by the U.S. Side, of visit to some points in the  
U.S.A. The U.S.S.R. Side requests to prolong their stay in  
Denver in order to:

1. Delineate in more detail the items of the itinerary  
and the priority of cooperative projects so as to  
speed up their implementation.
2. Listen to technical information of the U.S.B.R. experts  
on the projects:
  - Texas Water Plan;
  - The Missouri river partial run-off transfer to  
the Great Plains Irrigation Project;
  - The Missouri river partial run-off transfer to  
replenish water resources of the river basins  
in Texas and Arizona States;
  - Alaska and Canada partial run-off transfer to  
U.S.A. (Navappa project);
  - The Central Utah Project elements;
  - Large-scale pasture irrigation project for sheep  
breeding.
3. Visit the elements and pumping stations of Los-Angeles  
water supply system in the Central California Valley  
Project.
4. Visit the International Engineering Company  
(Morrison Knudsen Ltd.), San Francisco.

CONFIDENTIAL

PN 64.2702/6  
18 September 1974

MEMORANDUM FOR:

25X1A

SUBJECT : Opinion on New, Proposed Water Resources  
Topics: Ground Water Resources and  
Fishery Structures.

1. Groundwater Resources

a. We think that an exchange of ground water technology with the Soviets could be a net gain for the US and in any case would not result in a loss of any strategic technology. We are under the impression that the Soviets are ahead of the United States in groundwater research, probably because their needs in this field are greater.

b. The Soviet Union has of necessity engaged in intensive research on the use of arid and semi-arid lands. An important part of this research and development program is the utilization of underground waters.

c. Many articles have appeared on Soviet groundwater research in such Soviet journals as Problemy Osvoeniya Pustyn' (Problems of Desert Development) published in Turkmenistan since 1967. The Soviets claim that large fresh water lenses underlie the vast deserts of Soviet Central Asia and feel that if cheap methods of tapping these reserves are found, agricultural production in these areas can be significantly increased. Soviet scientists have developed methods used in the Kara Kum Desert of Turkmenistan for pumping slightly saline underground water to the surface and mixing it with fresh surface water collected in huge water catchment basins. This water is fed to sheep and cattle.

Classified by 019641

Exempt from general declassification  
schedule of E.O. 11652, exemption category:  
§5B(1), (2), (3) or (4) (circle one or more)

CONFIDENTIAL

Automatically declassified on  
Date Impossible to Determine

CONFIDENTIAL

## 2. Fishery Structures

a. We foresee no significant technological loss in the proposed exchange on fishery structures. However, we question the accuracy of the statements made in the proposal that "knowledge as to USSR state of the art is very limited" in this field, and "therefore, benefits to the United States are unknown."

### b. Information

25X1C

25X1C

25X1C

[redacted] indicates that USSR technology in this field is at a low level and consists, aside from experiments and intentions, largely of improvised solutions. [redacted] describes fishery structure technology on the Lower Volga and Don Rivers, two of the most important areas in the USSR for this type of technology. Therefore, US experts have probably seen the best the Soviets have developed.

25X1C

25X1C

25X1A

USSR-Europe Branch  
Geography Division, OBGI

CONFIDENTIAL

# USAF POSITION ON COMMUNIST COUNTRY VISITORS

Water Resources Cooperative Area US/USSR Agreement

Project / Sponsor .

NAFI	AFSC	FILE	OTHER
N/O	N/O	N/O	

8. USAF also provides the following: